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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FAULK, DEVONA E

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/577,399	SHI ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-22 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Paper No. 4, filed 5/6/04, with respect to the rejection(s) of claim(s) 1 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kato (U.S. Patent 6,121,531) and in view of Wymore et al. (U.S. Patent 6,456,978). The applicant asserts, on page 2, lines 1-19, that the examiner's argument of duplication did not rise to a patentable invention because this would simply involve using two AC '97 codecs. The examiner agrees. Rejections based on the newly cited art follows.
2. Applicant's arguments, see Paper No. 4, filed 5/6/04, with respect to the rejection(s) of claim(s) 3 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rhodes et al. (U.S. Patent 6,535,528). The applicant asserts, on page 2, lines 21-27, that the obvious assertion made by the examiner fails to make out a *prima facie* rejection. The examiner agrees. Rejections based on the newly cited art follows.
3. The applicant asserts, on page 3, that for reasons set forth with respect to claims 1 and 3, claims 5, 10, 12, 14, 17, and 20 should be in condition for allowance. The newly cited references also apply to claims 5, 10, 12, 14, 17 and 20. Rejections based on the newly cited references follow.

Claim Rejections - 35 USC § 112

4. Regarding claim 1, the phrase "another one of said stereo channel pairs", in line 13, renders the claim indefinite because it is unclear whether "another one of said stereo channel pairs" refers to a third stereo channel pair or if the claim language should recite "said another one of said stereo channel pairs". See MPEP § 2173.05(d)

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 12 and 16** are rejected under 35 U.S.C. 102(e) as being anticipated by Kato (U.S. Patent 6,121,531).

Regarding **claim 12**, Kato teaches of receiving at least two digital audio programs in a codec, converting each of said digital audio programs to an analog format and mixing each digital program and providing an analog output for each audio program (Figure 1, columns 3-4).

Claim 16 claims the method of claim 12 including mixing one of said audio programs in analog format with another analog signal. As stated above apropos of claim 12, the combination of Intel and Porter meets all elements of that claim. All elements of claim 16 are comprehended by claim 12.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Patent 6,121,531).

Regarding **claim 1**, Kato discloses a first pair of D/A converters coupled to a stereo channel pair (Figure 1); a pair of analog to digital converters, and a mixer. Although, he does not specifically teach of a second pair of D/A converters, another mixer as claimed, it is obvious to have three apparatuses in order to have six microphones operated in pairs. This would read on "a pair of analog mixers" as claimed, "a second pair of digital to analog converters as claimed, and "a pair of analog to digital converters" as claimed. The wires connecting the microphones would read on digital interface. The claim language, as written, does not tie all the elements into one integrated unit. It would have been obvious to one of ordinary skill in the art at the time of the invention to have three of the karaoke apparatus in order to have six microphones operated in pairs. An example might be three totally separate arrangements, each of which has the two microphones, 2 ADCs, 2DAC, and mixer of Kato as might be found in a recording studio, nightclub or the like.

Claim 4 claims the codec of claim 1 wherein said digital interface has a programmably changeable output data rate. As stated above apropos of claim 1, Kato meets all elements of that claim. D/A converters can have varied sample rates. It would have been obvious to one of ordinary skill in the art to D/A converter with have a changeable output data rate for the benefit of mixing data.

9. **Claim 3, 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Patent 6,121,531) in view of Rhodes et al. (U.S. Patent 6,535,528).

Claim 3 claims the codec of claim 1 wherein said digital interface includes a plurality of programmable ports so that the connections from the digital interface to said digital-to-analog converters may be changed. As stated above apropos of claim 1, Kato meets all elements of that claim. Rhodes discloses the concept of a digital interface with a plurality of ports (see claim 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to use Rhodes concept of a digital interface having a plurality of programmable ports for the benefit of being able to synchronously digital interface different components.

Claim 14 claims the method of claim 12 including outputting each of said audio programs through a different codec port and programmably changing the assignment of said programs to said ports. As stated above apropos of claim 12, Kato meets all elements of that claim. It is obvious to have three of Kato's apparatus combined in order to Rhodes discloses a digital interface with a plurality of ports (see claim 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to output each the audio programs through a different codec port, programmably changing the assignment of the ports for the benefit of being able to process different types of audio sources.

Claim 15 claims the method of claim 12 including programmably changing the data rate of at least one of the said audio programs. As stated above apropos of claim 12, Kato meets all elements of that claim. It is well known in the art that D/A converters can have varied output data rates. It is obvious that there is some varied data rate because the signals are mixed. It would have been obvious to one of ordinary skill in the art to modify Intel's method to include programmably changing the data rate of at least one of the audio for the benefit of being able to mix data.

10. **Claim 5,6,8,10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Patent 6,121,531) in view of Wymore et al. (U.S. Patent 6,456,978).

Regarding **claim 5**, Kato discloses a first pair of D/A converters coupled to a stereo channel pair (Figure 1); a pair of analog to digital converters, and a mixer. Although, he does not specifically teach of a second pair of D/A converters, another mixer as claimed, it is obvious to have three apparatuses in order to have six microphones operated in pairs. An example might be three totally separate arrangements, each of which has the two microphones, 2 ADCs, 2 DAC, and mixer of Kato as might be found in a recording studio, nightclub or the like. This would read on "a pair of analog mixers" as claimed, "a second pair of digital to analog converters as claimed, and "a pair of analog to digital converters" as claimed. The wires connecting the microphones would read on digital interface. The claim language, as written, does not tie all the elements into one integrated unit. Rhodes teaches the concept of a digital interface having a plurality of ports. There is obviously a processor present in the tone generator. Wymore teaches of an audio accelerator (136b) and a microphone input 136 may lead to the audio codec (AC'97) 136a where it may be digitized and sent to memory through an

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audio accelerator 136b (Figure 17, column 13, line 38). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an audio accelerator in order to achieve faster processing.

Claim 6 claims the processor-based system of claim 5 wherein said codec further includes a pair of analog-to-digital converters coupled to another one of said stereo channel pairs, one of said mixers also coupled to said pair of analog-to digital converts. As stated above apropos of claim 5, the combination of Kato and Wymore meets all elements of that claim. All elements of claim 6 are comprehended by claim 5. Therefore claim 6 is rejected for reasons given above apropos of claim 5.

Claim 8 claims the processor-based system of claim 5 wherein said system can process tow separate audio programs at the same time. As stated above apropos of claim 5, the combination of Kato and Wymore meets all elements of that claim. All elements of claim 8 are comprehended by claim 5. Therefore, claim 8 is rejected for reasons given above apropos of claim 5.

Claim 10 claims the processor-based system of claim 5 wherein said digital interface includes a plurality of programmable ports so that the connections from the digital interface to said digital-to-analog converters might be changed. As stated above apropos of claim 1, the combination of Kato and Wymore meets all elements of that claim. Rhodes discloses a digital interface with a plurality of ports (see claim 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to use Rhodes concept of a digital interface having a plurality of programmable ports for the benefit of being able to interface different components.

Claim 11 claims the codec of claim 5 wherein said digital interface has a programmably changeable output data rate. As stated above apropos of claim 5, the combination of Kato and Wymore. D/A converters can have varied sample rates. It would have been obvious to one of ordinary skill in the art to have the D/A converters have varied output data rates for the benefit of mixing data.

11. **Claims 17,18,20 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Patent 6,121,531).

10. Regarding **claim 17**, Kato of receiving at least two digital audio programs in a codec, converting each of said digital audio programs to an analog format and mixing each digital program. providing an analog output for each audio program (Figure 1, columns 3-4).

Kato discloses a first pair of D/A converters coupled to a stereo channel pair (Figure 1); a pair of analog to digital converters, and a mixer. Although, he does not specifically teach of a second pair of D/A converts, another mixer as claimed, it is obvious to have three apparatuses in order to have six microphones operated in pairs. It is obvious to have multiple apparatuses in order to have many microphones operated in pairs. It would therefore be obvious that that would be a separate output for each. This reads on "outputting each of said audio programs" as claimed. It is obvious that the assignment of ports can be changed because the microphones are removable. Kato teaches of a storage media (40) for controlling the effects section. It would have been obvious to one of ordinary skill in the art at the time of the invention to have instructions enabling the processing in order to have a more efficient apparatus.

Claim 18 claims the article of claim 17 further storing instructions that enable the processor- based system to programmably change the data rate of at least one of said audio

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programs. As stated above apropos of claim 17, Kato meets all elements of that claim. Kato teaches of a storage media (40) for controlling the effects section. It would have been obvious to one of ordinary skill in the art at the time of the invention to have instructions enabling the processing in order to have a more efficient apparatus.

12. Regarding **claim 20**, Kato of receiving at least two digital audio programs in a codec, converting each of said digital audio programs to an analog format and mixing each digital program. providing an analog output for each audio program (Figure 1, columns 3-4).

Kato discloses a first pair of D/A converters coupled to a stereo channel pair (Figure 1); a pair of analog to digital converters, and a mixer. Although, he does not specifically teach of a second pair of D/A converts, another mixer as claimed, it is obvious to have three apparatuses in order to have six microphones operated in pairs. It is obvious to have multiple apparatuses in order to have many microphones operated in pairs. It would therefore be obvious that that would be a separate output for each. This reads on "outputting each of said audio programs" as claimed. It is obvious that the assignment of ports can be changed because the microphones are removable. It would have been obvious to one of ordinary skill in the art at the time of the invention to have instructions enabling the processing in order to have a more efficient apparatus.

Claim 21 claims the article of claim 20 further storing instructions that enable the processor- based system to output each of said audio programs through a different codec port and programmably changing the assignment of said programs to said ports. As stated above apropos of claim 20, Kato meets all elements of that claim. Kato teaches of a storage media (40) for controlling the effects section. It would have been obvious to one of ordinary skill in the art at

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the time of the invention to have instructions enabling the processing in order to have a more efficient apparatus.

13. **Claims 7,19 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S. Patent 6,121,531) in view of Mayo (U.S. patent 5,133,081).

Claim 7 claims the processor-based system of claim 6 wherein said system may simultaneously play one audio program while recording another audio program.

As stated above apropos of claim 17, Kato meets all elements of that claim. Kato teaches of a machine-readable media (40) capable of storing recorded karaoke data. May discloses a system comprising two codecs capable of simultaneously recording and playing messages using the same recording medium (column 10, lines 42-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to use Mayo's concept of simultaneously recording and playing in order to allow simultaneous recording and playback.

Claim 19 claims the article of claim 17 further storing instructions that enable the processor-based system to play one audio program while recording another audio program.

As stated above apropos of claim 17, Kato meets all elements of that claim. Mayo discloses a system comprising two codecs capable of simultaneously recording and playing messages using the same recording medium (column 10, lines 42-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to use Mayo's concept of simultaneously recording and playing in order to allow simultaneous recording and playback.

Claim 22 claims the article of claim 20 further storing instructions that enable the processor-based system to play one audio program while recording another audio program.

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As stated above apropos of claim 20, Kato meets all elements of that claim. Mayo teaches of a system comprising two codecs capable of simultaneously recording and playing messages using the same recording medium (column 10, lines 42-46). It would have been obvious to one of ordinary skill in the art at the time of the invention use Mayo's concept of simultaneously recording and playing in to allow simultaneous recording and playback.

Claim Objections

14. **Claim 13** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER